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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,975	11/21/2003	Glenn L. Beane	15344/69391E	1755
26860 7590 12/09/2010 DEVINE, MILLIMET & BRANCH, P.A. 111 AMHERST STREET BOX 719 MANCHESTER, NH 03105				
EXAMINER				
MAL, NGOC LAN THI				
ART UNIT		PAPER NUMBER		
1733				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/719,975

Applicant(s)

BEANE, GLENN L.

Examiner

NGOCLAN T. MAI

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 2-6, 8-13, 56 and 58-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-6, 8-13, 56 and 58-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB06)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ ~~Notes of Informal Patent Application~~
- 6) ☐ Other: _____

DETAILED ACTION

Claims 2-6, 8-13, 56, and 58-62 are under examination. wherein claims 8, 2-5, 10, 11, 12 are amended.

Claims 2-6, 8-12, 59 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hermes in view of Lashmore.

Hermes discloses hydraulic press for compression of powder having upper punch, lower punch and die; the upper punch and lower punch being movable relative to each other for press operation and the relative motion being provided by means of first and second pistons respectively connected to the upper and lower punches and respectively moving in first and second cylinders having hydraulic conduit means interconnecting the two cylinders. See claim 1. Hermes teaches providing a controlled valve to bleed or branch off part of the flow of control liquid flowing between the cylinders in which run pistons for **controlling the position of the upper punch and lower punch or die**. See column 1, lines 40-45. Hermes also teaches three valves, I, II, III **control application of pressure** and connection of venting outlet to the piston chambers at opposite sides of the pistons and hydraulic pump H provides pressure fluid into various conduits and driven by a suitable motor M. See column 2, lines 16-22. Hermes therefore discloses the controlling a pressing of powder material in the die by controlling a pressure fluid provided to the pistons that are operatively associated with the workpiece forming punches which inherently controls a magnitude of a pressing force applied by the workpiece-forming punches and by controlling a position of the working punches relative to the die.

Concerning claims 8, 11 and 59-60, Hermes does not specifically teaches controlling the pressing of the powder material in the die by controlling a pressure fluid provided to the piston which includes the step determining a pressure of a fluid provided to each of at least one piston..., comparing the pressure of the fluid to a pressure corresponding to a desired pressing force and adjusting the pressure of the fluid provided to a desired pressing force. However it is submitted that one skilled in the art would conduct these steps in order to control the pressing of the powder material in the die by determine the pressure fluid in the existing piston(s), compare that with the pressure of the fluid corresponding to the desired pressing force and make any necessary adjustment. Therefore these steps would inherently include in the pressing operation and flow naturally from the teaching of the prior art.

Still regarding claim 8, Hermes differs from the claim Hermes does not teach controlling an introduction of a powder material into a die and controlling a creation of a substantially uniform distribution of powder material in the die.

Lashmore discloses a method for uniform delivery a quantity of particulate material into a die cavity of a powder press for compacting. The method provides for a uniform density distribution of the particles throughout the die cavity by provide a uniform, predetermined constant weight of particulate material into the die cavity. See column 1, lines 18-32 and column 4, lines 28-40). See column 4, lines 8-14 and column 5, lines 38-50.

Since Lashmore teaches in the same field of endeavor it would have been obvious to one skilled in the art to include the step of delivering particulate material taught by Lashmore by controlling the weight of the particulate material and fluidizing it once inside the cavity in the

method of pressing powder of Hermes in order to provide uniform density distribution of the particulate material before compacting.

Regarding claim 2, Hermes in view of Lashmore, where Lashmore teaches providing a uniform density is carried out by predetermined constant weight of particulate material into the die cavity. See column 4, lines 28-40 and column 8, lines 28-37).

Regarding claim 3 Hermes in view of Lashmore, where Lashmore also teaches (column 9, lines 17-22) delivery different material or multiplicity of alloy of different composition to make functionally graded alloys.

Regarding claim 4 Lashmore further teaches (column 12, lines 7-10) the powder feed system can be used in any known powder press manufacture process and can also be temperature controlled.

Regarding claim 5 Lashmore also discloses (column 4, lines 8-14, column 5, lines 38-50 and column 8, lines 38-41) uniformly distributing particulate material throughout all regions of a die cavity by operating to fluidize the particulate material once it is situated inside the die cavity.

As for claim 6, Lashmore discloses (column 12, lines 10-13) the temperature controlled can be carried out by heating with convection or induction, microwave system or heat transfer method that pump oil or hot water through pipe or coils.

Concerning claim 10, Hermes the method substantially as claimed. While Hermes does not specifically teaches controlling the position of the workpiece-forming punches by determining a position of each set of workpiece-forming punches, comparing the position of each

set of workpiece-forming punches to a desired position, and adjusting a rate of travel of each set of workpiece-forming punches based upon a result of the comparing step. However it is submitted one skilled in the art would conducted these steps in order to control the position of the punches by determine the position of the punches, comparing it with the desired position and making any necessary adjustment. Therefore these steps would inherently include in the process of pressing powder material and would flow naturally from the teaching of the prior art.

As for claim 12, Hermes in view of Lashmore do not specifically teach after pressing completion gradually reducing the pressing force applied by each of at least one set of workpiece-forming punches while maintaining the workpiece forming punches in a substantially fixed position such that the finished part is fully supported at all times prior to ejection. However such modification would have been obvious since pressing force applied by the punches must be reduced while the part is remained in the die before injecting part in order to provide support for the part.

Claim 13, 56 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hermes in view of Gueydan.

Regarding claims 56 and 58, Hermes teaches the method substantially as claimed. Hermes differs from the claim in that Hermes does not teach controlling lubrication of the die cavity.

Gueydan teaches in the same field of endeavor discloses coating the die cavity with a 0.3% by weight of lubricant in order to reduce die wear. See column 6, lines 7-8. By coating with a certain amount of lubricant Gueydan therefore teaches controlling lubrication of the die cavity.

Therefore, it would have been obvious to one skilled in the art to lubricate the die cavity in the process taught by Hermes and in a controlling in order to reduce die wear as taught by Gueydan.

As for claim 13, Hermes in view of Gueydan does not specifically teach control the lubrication of the die cavity by draining the lubricant from the die cavity. However Gueyday teaches in forming process the die and powder are heated to about 100 to 150 C to liquefy the lubricant which then escapes by draining from the pores. See column 2 lines 56-58. Therefore drain any excess or unwanted lubricant would drain from the die cavity through the pores of the die.

Claim 61-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hermes in view of Gueydan and Lashmore.

Regarding claim 61 Hermes in view of Lashmore and Gueydan collectively teach the claimed invention. The rejection can be found in previous paragraphs.

Response to Arguments

Applicant's response with respect to claims rejected in previous office action has been considered but are moot in view of the new ground(s) of rejection. See above rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NGOCLAN T. MAI whose telephone number is (571)272-1246. The examiner can normally be reached on 8:30-5:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Roy King/
Supervisory Patent Examiner, Art Unit
1733

n.m.